



**NASA REDUCED GRAVITY STUDENT FLIGHT OPPORTUNITIES PROGRAM
JOHNSON SPACE CENTER
2003 FLIGHT CAMPAIGN**

TO: Flight Crew and Alternate Flight Crew Members (Students and Journalists)
RE: Medical Examination Requirements for Flight Crew Members – 2003 Flights

NASA/JSC requires that all prospective flight crew / alternate flight crew members / journalists participating in the NASA Reduced Gravity Student Flight Opportunities Program complete a medical examination performed by a qualified FAA Certified Aviation Medical Examiner (AME) or Designated Military Flight Surgeon. The examination data is then reviewed by NASA's Physiological Training Office to determine an individual's "fitness for flight". Once they are physically qualified, individuals are eligible to participate in a Physiological Training course at JSC (which they will attend as part of their Houston experience).

A complete "Medical Examination Packet" is attached which includes:

- Letter of explanation addressed to the FAA Certified Aviation Medical Examiner (AME)
- NASA/JSC Medical Examination Requirements
- Height and Weight Table / Common Omissions
- JSC Form 8500 - Report of Medical Examination (Rev 8/00) - two pages
 - Page 1 - to be completed by applicant
 - Page 2 - to be completed by FAA Certified Aviation Medical Examiner (AME)

Remember to bring all of this with you when you go for your physical!

Each flight team member is responsible for the following:

- Locate a FAA Certified Aviation Medical Examiner (AME) and make an appointment. For March 2003 flyers, medical exam results are due no later than January 31, 2003 to JSC. For April 2003 flyers, medical exam results are due no later than February 28, 2003 to JSC. For July 2003 flyers, medical exam results are due no later than May 15, 2003 to JSC. The FAA website provides a Directory of Aviation Medical Examiners at <http://www.cami.jscbi.gov/AAM-400/index.html>.
- Read through this entire Medical Exam packet so you will be familiar with its contents and any additional medical exams (beyond the basic) that may apply to you.
- Make sure to print the team's school and your full legal name in top right corner on each page of the medical forms.
- Complete page one of the JSC 8500 (your medical history).
- Report to AME for medical exam. Don't forget to bring the letter to the physician, Medical Exam Requirements, Height and Weight Table/Common Omissions and JSC 8500 forms.
- Pay all expenses associated with the medical exam.
- Check with the physician's office after the exam is completed to make sure that the report has been signed and forwarded to JSC by the deadline date. The physician's staff should fax the forms directly to the NASA Physiological Training Office.

Additional Notes:

- Female flight crew members should notify the FAA Certified Aviation Medical Examiner if there is reason to suspect pregnancy.
- Flight crew members who have been previously certified as "qualified" to fly as part of this program MAY be exempt from the medical exam and/or physiological training requirement. Please provide the team member's full legal name and date of program participation to JSC's Program Administrator (Deanna Wilmore) for verification.
- Flight crew members who hold a pilot's license MAY be exempt from the Medical Exam requirement. A complete copy of the qualifying medical exam report MUST be provided to the JSC Physiological Training Officer for determination. A copy of the medical certificate or pilot's license is **NOT** required.

Direct questions concerning the NASA/JSC medical examination requirements for program participants to:

Mike Fox, Physiological Training Officer
Phone: 281-792-5724
email: mike.fox1@jsc.nasa.gov
Fax: 281-792-5731



NASA REDUCED GRAVITY STUDENT FLIGHT OPPORTUNITIES PROGRAM
JOHNSON SPACE CENTER
2003 FLIGHT CAMPAIGN

December 26, 2001

Dear FAA Certified Aviation Medical Examiner / Designated Military Flight Surgeon:

The person who has given you this letter is a member of a university team that has been selected to fly a micro-gravity experiment aboard NASA's KC-135A reduced gravity aircraft. NASA / JSC specifies that all prospective flyers must obtain a medical examination performed by a certified FAA Certified Aviation Medical Examiner or Designated Military Flight Surgeon. **The examination, however, is not considered to be an official FAA exam; the results are for NASA use only.**

Attached to this letter, you should find:

- NASA/JSC Medical Examination Requirements
- Height and Weight Table / Common Omissions
- JSC Form 8500 - Report of Medical Examination (Rev 8/00) - two pages
 - Page 1 - to be completed by applicant
 - Page 2 - to be completed by FAA Certified Aviation Medical Examiner

After the examination, please fax ONLY the signed and completed JSC Form 8500 (two pages) to:

NASA Johnson Space Center
Human Test Support Group - Mail Code SD-37
Houston, Texas 77058
Attn: Mike Fox, Physiological Training Officer
Fax: 281-792-5731

Please do not send EKGs, laboratory analyses, etc.

The NASA Physiological Training Office finds the following items **frequently omitted** on the JSC Form 8500, Report of Medical Examination. Before faxing the form to Johnson Space Center, PLEASE ask your staff to ensure all items are completed, including:

	<u>Record results in:</u>
Applicant's Height and Weight	Blocks 14 & 15
AME's Comments on History and Findings from Item 12	Block 51
Results of EKG (for applicants age 35 or older)	Block 49
AME's Name, Signature, Serial Number & Phone Number	Block 54

Questions concerning any of the medical requirements contained herein should be directed to:

Mike Fox, Physiological Training Officer
Ph: 281-792-5724
email: mike.fox1@jsc.nasa.gov

Thank you for helping NASA provide this outstanding educational experience to college students. If you have any further questions, please don't hesitate to contact Ms. Barbara Ebadat, Deputy Program Administrator at 281-483-7847.

With best regards,
Barbara Ebadat
Microgravity University
Deputy Program Administrator

MEDICAL EXAMINATION REQUIREMENTS
NASA REDUCED GRAVITY STUDENT FLIGHT OPPORTUNITIES PROGRAM
2003 Flight Campaign

EXAMINING PHYSICIAN: MUST be FAA Certified Aviation Medical Examiner (AME).

EXAM REQUIREMENTS: Applicant's Medical History and Physical Examination is reported on JSC Form 8500 (attached). This examination is NOT considered to be an official FAA exam. Medical results/opinions reported are for NASA use only. The Chief of the Medical Sciences Division at the Johnson Space Center serves as the final authority on the examinee's qualification for flight aboard the KC-135 microgravity aircraft.

FAA GUIDE FOR AVIATION MEDICAL EXAMINERS

Medical Standards – Effective September 16, 1996 - Third Class Medical Certificate																							
DISTANT VISION	20/40 or better in each eye separately, with or without correction.																						
NEAR VISION	20/40 or better in each eye separately (Snellen equivalent), with or without correction, as measured at 16 inches.																						
INTERMEDIATE VISION	No requirement.																						
COLOR VISION	Ability to perceive those colors necessary for safe performance of airman duties.																						
HEARING	Demonstrate hearing of an average conversational voice in a quiet room, using both ears at 6 feet, with the back turned to the examiner <u>or</u> pass one of the audiometric tests below (Speech Discrimination or Pure Tone)																						
AUDIOLOGY	Audiometric Speech Discrimination Test (Whisper Test): Score at least 70% discrimination in one ear. Pure tone Audiometric Test: Unaided, with thresholds no worse than: <table><tr><td></td><td>500 Hz</td><td>1,000 Hz</td><td>2,000 Hz</td><td>3,000 Hz</td></tr><tr><td>Better Ear</td><td>35 Db</td><td>30Db</td><td>30 Db</td><td>40 Db</td></tr><tr><td>Worst Ear</td><td>35 Db</td><td>50 Db</td><td>50 Db</td><td>60 Db</td></tr></table>						500 Hz	1,000 Hz	2,000 Hz	3,000 Hz	Better Ear	35 Db	30Db	30 Db	40 Db	Worst Ear	35 Db	50 Db	50 Db	60 Db			
	500 Hz	1,000 Hz	2,000 Hz	3,000 Hz																			
Better Ear	35 Db	30Db	30 Db	40 Db																			
Worst Ear	35 Db	50 Db	50 Db	60 Db																			
ENT	No ear disease or condition manifested by, or that may reasonably be expected to be manifested by, vertigo or a disturbance of speech or equilibrium.																						
PULSE	No disqualifying per se. Used to determine cardiac system status and responsiveness.																						
BLOOD PRESSURE	No specified values stated in the standards. Hypertension covered under general medical standard and in the <i>Guide for Aviation Medical Examiners</i> .																						
EKG	Not routinely required for persons under the age of 35. Required at age 35 and within the past year for persons age 40 and over.																						
MENTAL	No diagnosis of psychosis, or bipolar disorder, or severe personality disorders.																						
SUBSTANCE DEPENDENCE / SUBSTANCE ABUSE	A diagnosis or medical history of substance dependence “is disqualifying unless there is established clinical evidence, satisfactory to the Federal Air Surgeon, of recover, including sustained total abstinence from the substance(s) for not less than the preceding 2 years. A history of “substance” abuse within the preceding 2 years is disqualifying. “Substance” includes alcohol and other drugs (i.e., PCP, sedatives and hypnotics, anxiolytics, marijuana, cocaine, opioids, amphetamines, hallucinogens, and other psychoactive drugs or chemicals).																						
CONDITIONS THAT DISQUALIFY	Examiner must disqualify if the applicant has a history of <table><tr><td>- Diabetes mellitus requiring hypoglycemic medication;</td><td>- Permanent cardiac pacemaker;</td><td>- Substance abuse;</td></tr><tr><td>- Angina pectoris;</td><td>- Heart replacement;</td><td>- Epilepsy;</td></tr><tr><td>- Coronary heart disease that has been treated or, if untreated, that has been symptomatic or clinically significant;</td><td>- Psychosis;</td><td>- Disturbance of consciousness without satisfactory explanation of cause;</td></tr><tr><td>- Myocardial infarction;</td><td>- Bipolar disorder;</td><td>- Transient loss of control of nervous system function(s) without satisfactory explanation of cause</td></tr><tr><td>- Cardiac valve replacement;</td><td>- Personality disorder that is severe enough to have repeatedly manifested itself by overt acts;</td><td></td></tr><tr><td></td><td>- Substance dependence;</td><td></td></tr></table>					- Diabetes mellitus requiring hypoglycemic medication;	- Permanent cardiac pacemaker;	- Substance abuse;	- Angina pectoris;	- Heart replacement;	- Epilepsy;	- Coronary heart disease that has been treated or, if untreated, that has been symptomatic or clinically significant;	- Psychosis;	- Disturbance of consciousness without satisfactory explanation of cause;	- Myocardial infarction;	- Bipolar disorder;	- Transient loss of control of nervous system function(s) without satisfactory explanation of cause	- Cardiac valve replacement;	- Personality disorder that is severe enough to have repeatedly manifested itself by overt acts;			- Substance dependence;	
- Diabetes mellitus requiring hypoglycemic medication;	- Permanent cardiac pacemaker;	- Substance abuse;																					
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- Coronary heart disease that has been treated or, if untreated, that has been symptomatic or clinically significant;	- Psychosis;	- Disturbance of consciousness without satisfactory explanation of cause;																					
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	- Substance dependence;																						

**MEDICAL EXAMINATION REQUIREMENTS
HEIGHT / WEIGHT / COMMON OMISSIONS
NASA REDUCED GRAVITY STUDENT FLIGHT OPPORTUNITIES PROGRAM
2003 Flight Campaign**

HEIGHT AND WEIGHT TABLE

MALES			FEMALES		
HEIGHT (inches)	WEIGHT		HEIGHT (inches)	WEIGHT	
	MINIMUM LBS	MAXIMUM LBS		MINIMUM LBS	MAXIMUM LBS
58	98	171.4	58	88	151.8
59	99	173.7	59	90	154.1
60	100	176.0	60	92	156.4
61	102	178.3	61	95	158.7
62	103	181.7	62	97	162.2
63	104	184.0	63	100	163.3
64	105	188.6	64	103	167.9
65	106	194.4	65	106	172.5
66	107	200.1	66	108	178.3
67	111	205.9	67	111	182.9
68	115	211.6	68	114	188.6
69	119	217.4	69	117	193.2
70	123	223.1	70	119	199.0
71	127	228.9	71	122	203.6
72	131	235.8	72	125	209.3
73	135	242.7	73	128	216.2
74	139	250.7	74	130	223.1
75	143	257.6	75	133	228.9
76	147	264.5	76	136	235.8
77	151	271.4	77	139	241.5
78	153	278.3	78	141	247.3
79	157	285.2	79	144	254.2
80	161	292.1	80	147	259.9

COMMON OMISSIONS

The NASA Physiological Training Office frequently finds the following items commonly omitted on the JSC 8500 Medical Examination Form. Before faxing the form to the Johnson Space Center, please check to make sure all items are completed, including:

Applicant's Height and Weight
AME's Comments on History and Findings from Item 12
Results of EKG (for applicants age 35 or older)
AME's Name, Signature, Serial Number & Phone Number

Record results in:
Blocks 14 & 15
Block 51
Block 49
Block 54

RGSFOP	SCHOOL	FULL LEGAL NAME
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JSC FORM 8500 - REPORT OF MEDICAL EXAMINATION - PAGE 1 OF 2

APPLICANT MUST COMPLETE THIS MEDICAL HISTORY PLEASE TYPE OR PRINT CLEARLY IN DARK INK											
1. APPLICATION FOR RGSFOP		2. LAST NAME		FIRST NAME			MIDDLE NAME				
3. SSN		4. STREET ADDRESS		CITY		STATE	ZIP	PHONE # ()			
5. DOB (M/D/Y)	6. SEX	7. HAIR COLOR	8. EYE COLOR	9. <input type="checkbox"/> STUDENT <input type="checkbox"/> FACULTY <input type="checkbox"/> JOURNALIST			10. SCHOOL OR EMPLOYER				
11. DO YOU CURRENTLY USE ANY MEDICATION (prescription or non-prescription)? <input type="checkbox"/> YES <input type="checkbox"/> NO If yes, list name, purpose dosage & frequency of use below. Attach additional sheet if needed.											
12. MEDICAL HISTORY Have you EVER HAD, or do you NOW HAVE, any of the following conditions? Answer "YES" for every condition you have ever had in your life. Describe the condition and the approximate date of occurrence in the explanation box provided below.											
	YES	NO	CONDITION		YES	NO	CONDITION		YES	NO	CONDITION
A			FREQUENT OR SEVERE HEADACHES	I			STOMACH, LIVER OR INTESTINAL TROUBLE	Q			MOTION SICKNESSS REQUIRING MEDICATION
B			DIZZINESS OR FAINTING SPELLS	J			KIDNEY STONE OR BLOOD IN URINE	R			MILITARY MEDICAL DISCHARGE
C			UNCONSCIOUSNESS FOR ANY REASON	K			DIABETES	S			MEDICAL REJECTION BY MILITARY SERVICE
D			EYE OR VISION TROUBLE (EXCEPT GLASSES)	L			NEUROLOGICAL DISORDERS: EPILEPSY, SEIZURES, STROKE, PARALYSIS, ETC.	T			REJECTION FOR LIFE OR HEALTH INSURANCE
E			HAY FEVER OR ALLERGY	M			MENTAL DISCORDERS OF ANY SORT: DEPRESSION, ANXIETY, ETC.	U			ADMISSION TO HOSPITAL
F			ASTHMA OR LUNG DISEASE	N			SUBSTANCE DEPENDENCE OR FAILED DRUG TEST (EVER), OR SUBSTANCE ABUSE OR USE OF ILLEGAL SUBSTANCE IN THE LAST FIVE YEARS.	V			OTHER ILLNESS, DISABILITY OR SURGERY.
G			HEART OR VASCULAR TROUBLE	O			ALCOHOL DEPENDENCE OR ABUSE				
H			HIGH OR LOW BLOOD PRESSURE	P			SUICIDE ATTEMPT				
EXPLANATIONS: If you answered "yes" to any of the above items, describe the condition and the approximate date of occurrence. Use additional page if necessary.											
13. HAVE YOU VISITED A HEALTH PROFESSIONAL WITHIN THE LAST 3 YEARS? <input type="checkbox"/> YES (LIST BELOW) <input type="checkbox"/> NO											
DATE	NAME, ADDRESS & TYPE OF HEALTH PROFESSIONAL						REASON FOR VISIT				
NOTE. Whoever, in any manner, within the jurisdiction of any department or agency of the United States, knowingly and willfully falsifies, conceals or covers up, by any trick, scheme or device, a material fact; or who makes any false, fictitious or fraudulent statements, representations or entry, may be fined up to \$250,000 or imprisoned for not more than 3 years, or both (18 U.S. Code Sections 1001; 3571).											
SIGNATURE OF APPLICANT									DATE		

JSC FORM 8500 / STUDENT CAMPAIGNS / REV 12/01

RGSFOP	SCHOOL	FULL LEGAL NAME
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JSC FORM 8500 - REPORT OF MEDICAL EXAMINATION - PAGE 2 OF 2

FAA CERTIFIED AME MUST COMPLETE THIS PHYSICAL EXAMINATION <small>PLEASE TYPE OR PRINT CLEARLY IN DARK INK</small>						14. HEIGHT (INCHES)		15. WEIGHT (LBS)			
CHECK COLUMN FOR EACH ITEM											
CHECK COLUMN FOR EACH ITEM		NORMAL	ABNORMAL	CHECK COLUMN FOR EACH ITEM		NORMAL	ABNORMAL				
16. HEAD, FACE, NECK, SCALP				28. VASCULAR SYSTEM (pulse, amplitude, character, arms, legs, etc)							
17. NOSE				29. ABDOMEN & VISCERA (including hernia)							
18. SINUSES				30. ANUS (not including digital exam)							
19. MOUTH AND THROAT				31. SKIN							
20. EARS, GENERAL (internal & external canals; hearing under item #40)				32. G-U SYSTEM (not including pelvic exam)							
21. EAR DRUMS (perforation)				33. UPPER AND LOWER EXTREMITIES (strength/range of motion)							
22. EYES, GENERAL (vision under items #41-45)				34. SPINE, OTHER MUSCULOSKELETAL							
23. OPHTHALMOSOPIC				35. IDENTIFYING BODY MARKS (Scars, Tattoos) (size & location)							
24. PUPILS (equality & reaction)				36. LYMPHATICS							
25. OCULAR MOTILITY (assoc parallel movement, nystagmus)				37. NEUROLOGIC (tendon reflexes, equilibrium, senses, cranial, nerves, coordination, etc)							
26. LUNGS & CHEST (excluding breasts)				38. PSYCHIATRIC (appearance, behavior, mood, communication, memory)							
27. HEART (precordial activity, rhythm, sounds, murmurs)				39. GENERAL SYSTEMIC							
NOTES: Describe any above items checked "abnormal" in detail. Enter item number before each comment. Use additional sheet if necessary.											
40. HEARING		VOICE TEST		AUDIOMETER THRESHOLD IN							
		RIGHT EAR	LEFT EAR	RIGHT EAR				LEFT EAR			
				500	1000	2000	3000	4000	500	1000	2000
41. DISTANT VISION		RIGHT	20 /	CORRECTED TO	42. NEAR VISION		RIGHT	20 /	CORRECTED TO	43. COLOR VISION <input type="checkbox"/> NORMAL <input type="checkbox"/> ABNORMAL	
		LEFT	20 /	CORRECTED TO			LEFT	20 /	CORRECTED TO		
		BOTH	20 /	CORRECTED TO			BOTH	20 /	CORRECTED TO		
44. FIELD OF VISION <input type="checkbox"/> NORMAL <input type="checkbox"/> ABNORMAL		45. HETEROPHORIA 20' (in prism diopters)									
		ESOPHORIA		EXOPHORIA		RIGHT HYPERPHORIA		LEFT HYPERPHORIA			
46. BLOOD PRESSURE (sitting mm of mercury)		47. PULSE (resting)		48. URINALYSIS <input type="checkbox"/> NORMAL <input type="checkbox"/> ABNORMAL (give results)				49. EKG (DATE)			
SYSTOLIC		DIASTOLIC		ALBUMIN		SUGAR		MM	DD	YY	
50. OTHER TESTS GIVEN											
51. SIGNIFICANT MEDICAL HISTORY <input type="checkbox"/> YES <input type="checkbox"/> NO ABNORMAL PHYSICAL FINDING <input type="checkbox"/> YES <input type="checkbox"/> NO AME shall elaborate on all pertinent data; comment on all "YES" answers in the Medical History (pg 1, #12) and any abnormal findings of the exam. AME may develop, by interview, any additional medical history deemed important, and record any significant findings here. ATTACH ADDITIONAL COMMENTS ON HISTORY & FINDINGS.											
52. APPLICANT'S NAME						53. DISQUALIFYING DEFECTS (LIST BY ITEM NUMBER)					
54. AME'S DECLARATION. <i>I hereby certify that I have personally reviewed the medical history and personally examined the applicant named on this medical examination report. This report, with any attachment, embodies my findings completely and correctly.</i>											
EXAM DATE			AME'S NAME / ADDRESS / CITY / STATE / ZIP								
MM	DD	YY									
SIGNATURE:						AME'S SERIAL NUMBER		AME'S PHONE NUMBER			

JSC FORM 8500 / STUDENT CAMPAIGNS / REV 12/01